



Docket No.: 204403US0PCT

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ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

RE: Application Serial No.: 09/806,511
Applicants: Bernard ASPAR, et al.
Filing Date: April 16, 2001
For: METHOD FOR PRODUCING A LAYER OF
MATERIAL EMBEDDED IN ANOTHER
MATERIAL
Group Art Unit: 2812
Examiner: LATTIN, CHRISTOPHER W.

SIR:

Attached hereto for filing are the following papers:

REQUEST FOR RECONSIDERATION

Our check in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

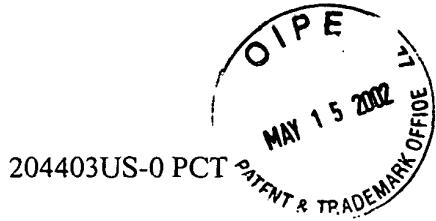
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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

BERNARD ASPAR ET AL ✓ : EXAMINER: LATTIN, C.

SERIAL NO: 09/806,511 ✓ :

FILED: APRIL 16, 2001 ✓ : GROUP ART UNIT: 2812

FOR: METHOD FOR PRODUCING
A BURIED LAYER OF MATERIAL
IN ANOTHER MATERIAL

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REQUEST FOR RECONSIDERATION

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Responsive to the Office Action dated February 15, 2002, Applicants respectfully request reconsideration of the above-identified application in view of the following remarks.

Claims 22-42 remain pending in the application.

REMARKS

The present invention relates to a method for producing a layer of material embedded in another material. It is applicable in particular to the field of semiconductors and especially for producing substrates of the Silicon on Insulator type.

As recited in Claim 22, the method is a method for producing a layer of a first material embedded in a substrate comprising at least one second material, comprising the following stages: formation in said substrate, at the level of the desired embedded layer, and by a method excluding the formation of a porous layer, of a layer of microcavities intended to

serve as centers of nucleation and volume accommodation to produce said first material in said second material; formation of precipitate embryos from the nucleation centers formed, the precipitate embryos corresponding to the first material; growth of the precipitates from the embryos through species concentration corresponding to the first material and carried to the microcavity layer.

The rejection of Claim 22 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. The Examiner finds no distinction between a layer of microcavities and a porous layer, the latter being excluded by the claims. In reply, the meaning of a layer of microcavities is well-known in this art, and is described in the specification at page 1, line 24, through page 3, line 11. This is different from a porous layer, which presumes a porosity in which fluid circulation is possible. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejections of Claims 22-36 and 39-42 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,849,204 (Fowler), and of Claims 37 and 38 under 35 U.S.C. § 103(a) as unpatentable over Fowler in view of U.S. Patent No. 6,151,824 (Henley et al), are respectfully traversed.

As discussed above, the presently-claimed invention is characterized by the formation of a layer of microcavities, as demonstrated by item 2 in the Figure, described in the specification beginning at page 9, line 23. Fowler, on the other hand, is not concerned at all with a layer of microcavities; rather, Fowler is concerned with interface states at the interface of a substrate and oxide surface. As disclosed by Fowler, such interface states are formed due to outdiffusion of hydrogen which outdiffuses during some high temperature step in the fabrication of, for example, an MIOS (Metal-Insulator-Oxide-Semiconductor) device in which a silicon dioxide or other oxide layer is formed on a semiconductor material substrate

such as silicon and a further layer of silicon nitride or aluminum oxide is deposited on the silicon dioxide layer. Fowler discloses solving this problem by implanting hydrogen ions at the interface region which is capable of entering the lattice of the substrate, and then annealing the substrate in an inert atmosphere for a time and temperature sufficient to substantially eliminate the interface states. The interface states are shown as item 5 in Figures 1A-1C of Fowler, and it is thus clear that they are not the same as, nor analogous to, the presently-recited layer of microcavities.

Henley et al is concerned with silicon-on-silicon substrates by employing a bonding process that uses a layer of microbubbles to achieve a better bond without having to resort to forming an epitaxial layer on the surface of the substrate. Henley et al does not remedy any of the above-discussed deficiencies of Fowler. Indeed, one skilled in the art would not have combined Fowler and Henley et al, because each reference is concerned with different structures, different problems, and different solutions. Moreover, even if the references were combined, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that the rejections over prior art be withdrawn.

All of the presently-pending claims in this application are believed to be in immediate condition for allowance. The Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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